

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Confirmation No: **4690**

**Glock et al.**

Art Unit: **1612**

Serial No.: **10/070,936**

Examiner: **Qazi, S.**

Filed: **August 09, 2002**

Syngenta Matter No.: **31140**

For: **HERBICIDAL COMPOSITION**

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**BRIEF ON APPEAL**

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being electronically transmitted to the United States Patent & Trademark Office (USPTO) using the USPTO's e-filing procedure on August 18, 2010.

/James D. Withers/

James D. Withers - Reg. No. 40,376

Dear Sir:

This is an appeal from the final Office Action mailed on September 18, 2009 rejecting claims 1-17.

A Notice of Appeal in this application was filed on March 18, 2010, and was received in the USPTO on March 18, 2010.

The fee required under 37 CFR §41.20(b)(2) for filing an appeal brief was previously paid along with a most recent Notice of Appeal filed on August 13, 2008. The fee paid on August 13, 2008 was \$510. If a balance of \$30 is owed, please charge any additional fee to Withers & Keys, LLC, Deposit Account No. 503025.

Appellants request the opportunity for a personal appearance before the Board of Appeals to argue the issues of this appeal. The fee for the personal appearance will be timely paid upon receipt of the Examiner's Answer.

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**REAL PARTY IN INTEREST**

The real party in interest is Syngenta Crop Protection, Inc. of Greensboro, North Carolina.

**RELATED APPEALS AND INTERFERENCES**

The assignee, the assignee's legal representatives, and the Appellants submit that there are no related appeals or interferences that are directly affected by or have a bearing on the Board's decision in this appeal.

**STATUS OF CLAIMS**

Claims 1-17 are pending in the present application.

Claims 1-17 stand rejected. Each of rejected claims 1-17 has been appealed. A clean copy of the pending claims is attached in the Claims Appendix section below.

**STATUS OF AMENDMENTS**

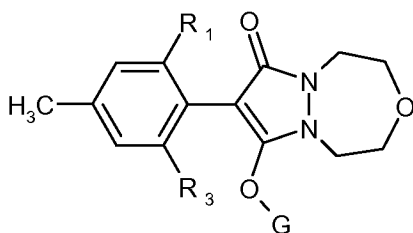
No amendments have been filed after the final Office Action dated September 18, 2009.

**SUMMARY OF CLAIMED SUBJECT MATTER**

The claims of the present invention are directed to herbicidal compositions.

In independent claim 1, the claimed selective herbicidal composition (page 2, line 12) comprises, as the active ingredient, a mixture of (page 2, lines 12-14):

- a) a herbicidally effective amount of a compound of formula I



(I) (page 2, lines 15-16; page 8,

lines 11-13)

or salts (page 12, lines 14-15) or diastereoisomers (page 13, lines 20-22) thereof, wherein:

R<sub>1</sub> and R<sub>3</sub> are CH<sub>2</sub>CH<sub>3</sub> (page 8, lines 8-10); and

G is hydrogen (page 25, line 17) or C(O)C(CH<sub>3</sub>)<sub>3</sub> (page 26, line 3); and

- b) a herbicidally synergistic amount of at least one herbicide selected from clodinafop-p-propargyl, fenoxaprop-P-ethyl, tralkoxydim, triasulfuron, amidosulfuron, tribenuron, idosulfuron, thifensulfuron-methyl, metsulfuron, flupyrsulfuron, sulfosulfuron, mecoprop, fluroxypyr, MCPA, 2,4-D ester, 2,4-D amine, triallate, prosulfocarb, dicamba, diflufenican, picolinafen, pendimethalin, trifluralin, bromoxynil, ioxynil, flucarbazone, florasulam, propoxycarbazone, and metosulam (page 10, line 15 to page 11, line 26).

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The following grounds of rejection are to be reviewed on appeal:

- 1) Whether claims 1-17 meet the enablement requirements of 35 U.S.C. §112, first paragraph.
- 2) Whether claims 1-17 are patentable under 35 U.S.C. §103(a) over European Patent Application Publication No. EP508,126 (which is equivalent to U.S. Patent No. 6,221,810 issued to Kruger et al.) (hereinafter, “Kruger”) in combination with German Patent Application Publication No. DE19728568 (which is equivalent to U.K. Patent Application Publication No. GB2315413 to Dahmen et al.) (hereinafter, “Dahmen”), International Patent Publication No. WO96/21652 to Böger et al. (hereinafter, “Böger”), U.S. Patent No. 4,834,908 issued to Hazen et al. (hereinafter, “Hazen”), and Appellants’ own specification.

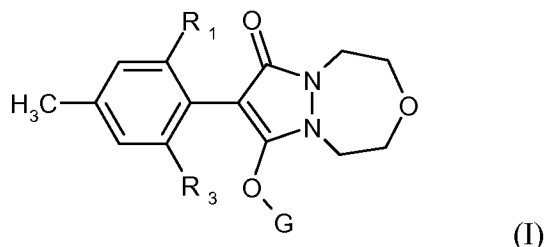
## ARGUMENTS

### **I. REJECTION OF CLAIMS 1-17 UNDER 35 U.S.C. §112, FIRST PARAGRAPH**

Claims 1-17 stand rejected under 35 U.S.C. §112, first paragraph. Reversal of this rejection is respectfully requested for the reasons provided below.

#### **A. CLAIMS 1-17**

Appellants' claimed invention, as embodied in independent claim 1, is directed to a selective herbicidal composition comprising, as the active ingredient, a mixture of a) a herbicidally effective amount of a compound of formula I:



or salts or diastereoisomers thereof, wherein  $R_1$  and  $R_3$  are  $\text{CH}_2\text{CH}_3$ , and  $G$  is hydrogen or  $\text{C}(\text{O})\text{C}(\text{CH}_3)_3$ ; and b) a herbicidally synergistic amount of at least one herbicide selected from clodinafop-p-propargyl, fenoxaprop-P-ethyl, tralkoxydim, triasulfuron, amidosulfuron, tribenuron, idosulfuron, thifensulfuron-methyl, metsulfuron, flupyrsulfuron, sulfosulfuron, mecoprop, fluroxypyr, MCPA, 2,4-D ester, 2,4-D amine, triallate, prosulfocarb, dicamba, diflufenican, picolinafen, pendimethalin, trifluralin, bromoxynil, ioxynil, flucarbazone, florasulam, propoxycarbazone, and metosulam.

Claims 2-17 depend from independent claim 1 and recite additional claim features.

#### **B. The Enablement Rejection**

Examiner Qazi maintains the position that Appellants' original specification does not provide an enabling disclosure for Appellant's claimed invention. Examiner Qazi appears to be of the opinion that the combination of (1) compound 1.007 (i.e., where  $G$  is hydrogen) or compound 1.008 (i.e., where  $G$  is  $\text{C}(\text{O})\text{C}(\text{CH}_3)_3$ ) with (2) safener cloquincet-mexyl is enabling

given the examples on pages 43-44 of Appellants' original specification (see, page 5, lines 13-15 of the September 18, 2009 final Office Action); however, Examiner Qazi is of the opinion that any combination of (1) compound 1.007 or compound 1.008 with (2) a herbicide recited as component b) in Appellants' independent claim 1 is not enabling.

Examiner Qazi specifically states the following from page 6, line 6 to page 7, line 5 of the September 18, 2009 final Office Action:

The specification does not enabled for the synergistic combination of a) all the compounds of formula 1 and herbicides b) which as claimed are herbicidally synergistic amount of at least one herbicide selected from clodinafop-p-propargyl, fenoxaprop-P-ethyl, tralkoxydim, triasulfuron, amidosulfuron, tribenuron, idosulfuron, thifensulfuron-methyl, metsulfuron, flupyrsulfuron, sulfosulfuron, mecoprop, fluroxypyr, MCPA, 2,4-D ester, 2,4-D amine, triallate, prosulfocarb, dicamba, diflufenican, picolinafen, pendimethalin, trifluralin, bromoxynil, ioxynil, flucarbazone, florasulam, propoxycarbazone, and metosulam.

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Compound of formula I itself include very large number of compounds due to variety of substituents defined by G, R<sub>1</sub> and R<sub>2</sub>.

Appellants disagree.

Appellants maintain the position that one of ordinary skill in the art, given Appellants' original specification, would have understood how to combine (1) compound 1.007 or compound 1.008 with (2) any herbicide recited as component b) to obtain a selective herbicidal composition as recited in Appellants' claims. Further, Appellants respectfully submit that Appellants' original specification provides clear guidance to one skilled in the art regarding how to test a given combination of (1) compound 1.007 or compound 1.008 and (2) any one herbicide or combination of herbicides listed as component b) in Appellants' independent claim 1 without undue experimentation.

Appellants note that the number of compounds recited in Appellants' claimed invention and having formula I is two, not a "very large number of compounds due to variety of substituents defined by G, R<sub>1</sub> and R<sub>2</sub>" as stated by Examiner Qazi in the above passage found on

page 7, lines 4-5 of the September 18, 2009 final Office Action. As shown in Appellants' independent claim 1,  $R_1$  and  $R_3$  are each independently  $\text{CH}_2\text{CH}_3$ , and G is either hydrogen or  $\text{C}(\text{O})\text{C}(\text{CH}_3)_3$ . Consequently, one skilled in the art, when formulating herbicidal compositions of Appellants' claimed invention, starts with either compound 1.007 (i.e., where G is hydrogen) or compound 1.008 (i.e., where G is  $\text{C}(\text{O})\text{C}(\text{CH}_3)_3$ ).

Appellants' original specification provides clear guidance to one skilled in the art regarding how to test a given combination of (1) compound 1.007 or compound 1.008 with (2) a herbicide listed as component b) in independent claim 1. Beginning on page 39 in Example B1, Appellants' original specification provides a specific example illustrating a technique for determining the effectiveness of the combination of (1) compound 1.007 with (2) clodinafop-p-propargyl. As shown in Table B1 of Appellants' original specification, various herbicidal compositions were prepared, some of which contained a single herbicide, clodinafop-p-propargyl, while others contained both compound 1.007 and clodinafop-p-propargyl. Each herbicidal composition was then evaluated using a "Postemergence Test" as described in Example B1, wherein the phytotoxic action of a given herbicidal composition on *Alopecurus* plants is determined.

Appellants respectfully submit that one skilled in the art would have known how to evaluate a given combination of (1) compound 1.007 or compound 1.008 with (2) a herbicide listed as component b) in independent claim 1 using a similar technique as described in Example B1 of Appellants' original specification. One skilled in the art would simply (i) formulate one or more herbicide compositions containing at least one of the herbicides listed as component b) in independent claim 1 (without compound 1.007 or compound 1.008), (ii) formulate identical herbicide compositions containing the at least one of the herbicides listed as component b) in independent claim 1 with compound 1.007 or compound 1.008, and (iii) evaluate each herbicidal composition using the "Postemergence Test" as described in Example B1.

Appellants respectfully submit that even if the predictability of the outcome of the "Postemergence Test" for a specific combination of (1) compound 1.007 or compound 1.008 with (2) a herbicide listed as component b) in independent claim 1 is relatively low, the procedure for determining the outcome of the "Postemergence Test" for the specific combination is simple, straightforward, and clearly described in Appellants' original specification. Given the



simplicity of the disclosed “Postemergence Test” as described in Example B1, Appellants respectfully submit that the process of determining the outcome of the “Postemergence Test” for a specific combination of (1) compound 1.007 or compound 1.008 with (2) a herbicide listed as component b) in independent claim 1 would involve limited, focused experimentation, not undue experimentation as suggested in the September 18, 2009 final Office Action.

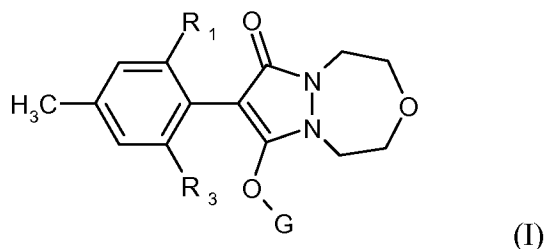
For at least the reasons provided above, Appellants respectfully submit that claims 1-17 meet the enablement requirements of 35 U.S.C. §112, first paragraph. Accordingly, reversal of this rejection is respectfully requested.

## II. REJECTION OF CLAIMS 1-17 UNDER 35 U.S.C. §103(a) IN VIEW OF KRUGER IN COMBINATION WITH DAHMEN, BÖGER, HAZEN AND APPELLANTS’ OWN SPECIFICATION

Claims 1-17 stand rejected under 35 U.S.C. §103(a) in view of the teaching of Kruger in combination with the teachings of Dahmen, Böger, Hazen and Appellants’ own specification. Reversal of this rejection is respectfully requested for the reasons provided below.

### A. CLAIMS 1-17

As discussed above, Appellants’ claimed invention, as embodied in independent claim 1, is directed to a selective herbicidal composition comprising, as the active ingredient, a mixture of a) a herbicidally effective amount of a compound of formula I:



or salts or diastereoisomers thereof, wherein  $R_1$  and  $R_3$  are  $\text{CH}_2\text{CH}_3$ , and  $G$  is hydrogen or  $\text{C}(\text{O})\text{C}(\text{CH}_3)_3$ ; and b) a herbicidally synergistic amount of at least one herbicide selected from clodinafop-p-propargyl, fenoxaprop-P-ethyl, tralkoxydim, triasulfuron, amidosulfuron, tribenuron, idosulfuron, thifensulfuron-methyl, metsulfuron, flupyrsulfuron, sulfosulfuron, mecoprop, fluroxypyr, MCPA, 2,4-D ester, 2,4-D amine, triallate, prosulfocarb, dicamba,

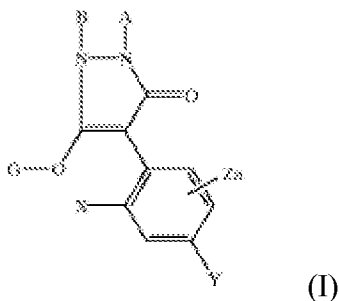
diflufenican, picolinafen, pendimethalin, trifluralin, bromoxynil, ioxynil, flucarbazone, florasulam, propoxycarbazone, and metosulam.

Claims 2-17 depend from independent claim 1 and recite additional claim features.

**1. Art Relied Upon By Examiner Qazi**

**a. Kruger**

The teaching of Kruger is directed to 3-hydroxy-4-aryl-5-oxo-pyrazoline derivatives and their use as an active ingredient in insecticide, acaricide and herbicide formulations. The 3-hydroxy-4-aryl-5-oxo-pyrazoline derivatives have a chemical structure as shown in formula (I):



in which

A and B are identical or different and independently of one another in each case represent hydrogen, alkyl, alkenyl, alkynyl, alkoxyalkyl, alkylthioalkyl, cycloalkyl or optionally substituted aryl, or A and B together represent the bivalent radical of a saturated or unsaturated, optionally substituted, mono-, bi-, tri- or polycyclic system,

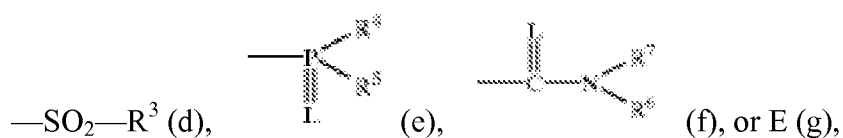
X represents alkyl, halogen or alkoxy,

Y represents hydrogen, alkyl, halogen, alkoxy or halogenoalkyl,

Z represents alkyl, halogen or alkoxy,

n represents a number 0, 1, 2 or 3,

G represents hydrogen (a) or the groups  $\text{—CO—R}^1$  (b), (c),



in which

E represents a metal ion equivalent or an ammonium ion,

L and M represents oxygen and/or sulphur,

$\text{R}^1$  represents optionally halogen-substituted alkyl, alkenyl, alkoxyalkyl, alkylthioalkyl, polyalkoxyalkyl or cycloalkyl which can be interrupted by hetero atoms, optionally substituted phenyl, optionally substituted phenylalkyl, substituted hetaryl, substituted phenoxyalkyl or substituted hetaryloxyalkyl and

$\text{R}^2$  represents optionally halogen-substituted alkyl, alkenyl, alkoxyalkyl, polyalkoxyalkyl or optionally substituted phenyl or benzyl,

$\text{R}^3$ ,  $\text{R}^4$  and  $\text{R}^5$  independently of one another represent optionally halogen-substituted alkyl, alkoxy, alkylamino, dialkylamino, alkylthio, alkenylthio, alkynylthio or cycloalkylthio, and optionally substituted phenyl, phenoxy or phenylthio,

$\text{R}^6$  and  $\text{R}^7$  independently of one another represent hydrogen, optionally halogen-substituted alkyl, alkenyl, alkoxy or alkoxyalkyl, optionally substituted phenyl, optionally substituted benzyl, or  $\text{R}^6$  and  $\text{R}^7$  together represent an alkylene radical which is optionally interrupted by oxygen.

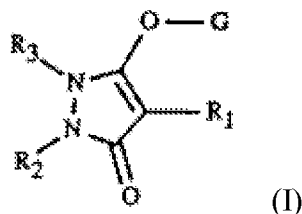
It should be noted that although Kruger discloses thousands of compounds having formula (I), the teaching of Kruger does not disclose, teach or suggest any compounds of formula (I) wherein A and B together form the bivalent radical  $\text{—CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{—}$ . Further, the teaching of Kruger does not disclose, teach or suggest any compounds of formula (I) wherein  $n = 1$ , X and Z are identical, and Y differs from X and Z, and especially, any compounds of formula (I) wherein  $n = 1$ , X and Z are ethyl groups, and Y is a methyl group.

## b. Dahmen

The teaching of Dahmen is directed to novel synergistic herbicidal combinations of N-isopropyl-N-(4-fluorophenyl)(5-trifluoromethyl-1,3,4-thiadiazol-2-yloxy)acetamide with fenoxaprop-ethyl and/or clodinafop-propargyl.

### c. Böger

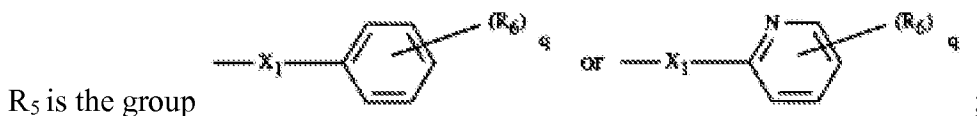
The teaching of Böger is directed to 4-aryl- and 4-heteroaryl-5-oxopyrazoline derivatives and their use as an active ingredient in insecticide, acaricide and herbicide formulations. The 4-aryl- and 4-heteroaryl-5-oxopyrazoline derivatives have a chemical structure as shown in formula (I):



in which



the substituents R<sub>4</sub> independently of one another are halogen, nitro, cyano, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>10</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>3</sub>-C<sub>6</sub>alkenyloxy, C<sub>1</sub>-C<sub>4</sub>alkoxy-C<sub>2</sub>-C<sub>4</sub>alkoxy, C<sub>3</sub>-C<sub>6</sub>alkynyloxy, C<sub>1</sub>-C<sub>4</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, amino, C<sub>1</sub>-C<sub>4</sub>alkylamino or di(C<sub>1</sub>-C<sub>4</sub>alkyl)amino;



n is 0, 1, 2, 3 or 4;

m is 0 or 1, and the sum of m and n is 0, 1, 2, 3 or 4;

q is 0, 1, 2 or 3;

X<sub>1</sub> is oxygen, sulfur, -CH<sub>2</sub>- or -N(R<sub>7</sub>)-;

the substituents R<sub>6</sub> independently of one another are C<sub>1</sub>-C<sub>4</sub>alkyl, halogen, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, nitro, cyano, C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl, amino, C<sub>1</sub>-C<sub>4</sub>alkylamino or di(C<sub>1</sub>-C<sub>4</sub>alkyl)amino;

R<sub>7</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, formyl or C<sub>1</sub>-C<sub>4</sub>alkylcarbonyl;

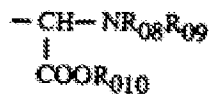
R<sub>2</sub> and R<sub>3</sub> independently of one another are hydrogen, C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>3</sub>-C<sub>8</sub>alkenyl, C<sub>3</sub>-C<sub>8</sub>alkynyl, C<sub>1</sub>-C<sub>8</sub>alkoxyalkyl, C<sub>1</sub>-C<sub>8</sub>alkylthioalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl or substituted or

unsubstituted aryl; or

R<sub>2</sub> and R<sub>3</sub> together form the bivalent radical of a saturated or unsaturated, unsubstituted or substituted, mono-, bi-, tri- or polycyclic system, which system can optionally contain, in positions not adjacent to the nitrogen atoms shown in formula I, one or more ring hetero atoms;

G is the group -CO-A (a) or -SO<sub>2</sub>-B (b);

A is C<sub>1</sub>-C<sub>8</sub>alkyl substituted by nitro, cyano, Si(C<sub>1</sub>-C<sub>4</sub>alkyl)<sub>3</sub>, amino, C<sub>1</sub>-C<sub>4</sub>alkylamino, di(C<sub>1</sub>-C<sub>4</sub>alkyl)amino, substituted or unsubstituted benzyloxy or a group



or A is C<sub>3</sub>-C<sub>8</sub>cycloalkyl which can if desired contain as heteroatom oxygen, sulfur or nitrogen and is substituted by C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl or substituted or unsubstituted phenyl, or A is C<sub>3</sub>-C<sub>8</sub>cycloalkyloxy which can if desired contain heteroatom oxygen, sulfur or nitrogen and is substituted by C<sub>1</sub>-C<sub>4</sub>alkyl, or A is adamantyl, naphthyl, naphthyl substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl or C<sub>1</sub>-C<sub>4</sub>alkoxy, or A is a group -(CR<sub>8</sub>R<sub>9</sub>)-(Y)<sub>0</sub>-CO(Z)<sub>r</sub>-R<sub>10</sub>, -(CR<sub>8</sub>R<sub>9</sub>)<sub>p</sub>-R<sub>11</sub> or -N(R<sub>10</sub>)R<sub>13</sub>;

R<sub>08</sub>, R<sub>09</sub> and R<sub>010</sub> independently of one another are hydrogen or C<sub>1</sub>-C<sub>6</sub>alkyl;

R<sub>8</sub> and R<sub>9</sub> independently of another are hydrogen, C<sub>1</sub>-C<sub>6</sub>alkyl or phenyl;

R<sub>10</sub> is hydrogen, C<sub>1</sub>-C<sub>10</sub>alkyl, C<sub>1</sub>-C<sub>10</sub>alkyl substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>3</sub>-C<sub>12</sub>cycloalkyl, cyano, aryl or aryloxy, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>3</sub>-C<sub>10</sub>alkenyl, C<sub>3</sub>-C<sub>10</sub>alkynyl, C<sub>3</sub>-C<sub>10</sub>haloalkenyl, C<sub>3</sub>-C<sub>10</sub>haloalkynyl, aryl, aryl substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, nitro, cyano, phenoxy or halo-substituted phenoxy;

o and r independently of one another are 0 or 1;

Y and Z independently of one another are oxygen or NR<sub>12</sub>;

p is 1 to 10;

R<sub>11</sub> is C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, aryloxy, aryloxy substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, nitro, cyano, phenoxy or halo-substituted phenoxy, benzyloxy, benzyloxy

substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, nitro, cyano, phenoxy or halo-substituted phenoxy, norbornyl or adamantyl, where aryloxy with the exception of phenoxy can in each case be any desired aryloxy group;

R<sub>12</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>10</sub>alkenyl or C<sub>3</sub>-C<sub>10</sub>alkynyl;

R<sub>13</sub> is C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, or cyano-C<sub>1</sub>-C<sub>6</sub>alkyl;

B is C<sub>1</sub>-C<sub>10</sub>alkyl substituted by C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>haloalkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyloxy, C<sub>1</sub>-C<sub>4</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>alkylcarbonyloxy, di(C<sub>1</sub>-C<sub>4</sub>alkyl)amino, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, aryl, aryloxy, arylthio, arylsulfonyl, arylsulfinyl, arylsulfonyloxy, arylcarbonyl or pyridyl, it being possible for the aryl and pyridyl groups if desired to be substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, nitro, cyano, phenoxy, halo-substituted phenoxy, phenylthio or halo-substituted phenylthio, or B is C<sub>3</sub>-C<sub>10</sub>alkenyl, C<sub>3</sub>-C<sub>10</sub>haloalkenyl, C<sub>3</sub>-C<sub>10</sub>alkynyl, C<sub>3</sub>-C<sub>10</sub>haloalkynyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, benzyl, benzyl substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl or C<sub>1</sub>-C<sub>4</sub>alkoxy, naphthyl, naphthyl substituted by halogen or nitro, or B is a group -N(R<sub>21</sub>)R<sub>22</sub>;

R<sub>21</sub> is C<sub>1</sub>-C<sub>10</sub>alkyl substituted by C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkoxy-C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>haloalkylthio, C<sub>1</sub>-C<sub>4</sub>alkylsulfinyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyl, C<sub>1</sub>-C<sub>4</sub>alkylsulfonyloxy, C<sub>1</sub>-C<sub>4</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub>alkylcarbonyloxy, di(C<sub>1</sub>-C<sub>4</sub>alkyl)amino, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, aryl, aryloxy, arylthio, arylsulfonyl, arylsulfinyl, arylsulfonyloxy, arylcarbonyl or pyridyl, it being possible for the aryl and pyridyl groups if desired to be substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, nitro, cyano, phenoxy, halo-substituted phenoxy, phenylthio or halo-substituted phenylthio, or R<sub>21</sub> is C<sub>3</sub>-C<sub>20</sub>alkenyl, C<sub>3</sub>-C<sub>20</sub>haloalkenyl, C<sub>3</sub>-C<sub>20</sub>alkynyl, C<sub>3</sub>-C<sub>20</sub>haloalkynyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl substituted by halogen or C<sub>1</sub>-C<sub>4</sub>alkyl, benzyl or aryl, it being possible for the benzyl and aryl groups if desired to be substituted by halogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>haloalkyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>haloalkoxy, C<sub>1</sub>-C<sub>4</sub>alkylthio, nitro, cyano, benzoyl, halo-substituted benzoyl, phenoxy or halo-substituted phenoxy;

R<sub>22</sub> is as defined for R<sub>21</sub> or else alternatively is C<sub>1</sub>-C<sub>10</sub>alkyl; or

$R_{21}$  and  $R_{22}$ , together with the nitrogen atom to which they are attached, form an unsubstituted or mono- to trisubstituted, nonaromatic, mono- or bicyclic heterocyclic ring in which the substituents can be  $C_1$ - $C_4$ alkyl,  $C_1$ - $C_4$ alkyl substituted by halogen,  $C_1$ - $C_4$ alkoxy, phenyl, benzodioxoyl or trifluoromethyphenyl,  $C_1$ - $C_4$ alkoxy,  $C_1$ - $C_4$ alkoxycarbonyl,  $C_1$ - $C_4$ alkylcarbonyl, phenyl, phenyl substituted by halogen,  $C_1$ - $C_4$ alkyl,  $C_1$ - $C_4$ alkoxy, nitro or trifluoromethyl, pyridyl, pyrimidinyl or formyl, and salts and diastereomers of the compounds of the formula I, with the proviso that, if  $R_{21}$  and  $R_{22}$  are alkyl, at least one of these radicals is substituted alkyl.

It should be noted that although Böger discloses thousands of compounds having formula (I), the teaching of Böger does not disclose, teach or suggest any compounds of formula (I) wherein  $R_2$  and  $R_3$  together form the bivalent radical  $-\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2-$ . Further, the teaching of Böger does not disclose, teach or suggest any compounds of formula (I) wherein G is hydrogen or  $\text{C}(\text{O})\text{C}(\text{CH}_3)_3$ . In addition, the teaching of Böger does not disclose, teach or suggest



any compounds of formula (I) wherein  $R_1$  comprises  $R_4$  groups at the 2 and 6 positions are ethyl groups, and one  $R_4$  group at the 4 position is a methyl group.

#### d. Hazen

The teaching of Hazen is directed to crop oil concentrates for use in herbicidal compositions. The disclosed crop oil concentrates comprise a lower alkanol ester of a fatty ester containing 4 to 22 carbon atoms, an anionic surfactant, and a long chain carboxylic acid containing from 10 to 20 carbon atoms.

#### e. Appellants' Own Specification

Examiner Qazi interprets Appellants' own specification as admitting that all compounds recited in Appellants' claims are well known. Examiner Qazi points to page 1, lines 17-27, and pages 10-12 of Appellants' original specification.

Page 1, lines 17-27 of Appellants' original specification discloses the following:

For example, it has been found that the safeners cloquintocet or cloquintocet-mexyl and mefenpyr or mefenpyr-diethyl, which are known from EP-A-0 191 736 (comp. 1.316) and WO 91/07874 (example 3) as well as from The Pesticide Manual, 11ed. , British Crop Protection Council, Entry Nos. 154 and 462, can indeed protect the cultivated plants from the phytotoxic action of in particular 3-hydroxy-4-(4-methylphenyl)-5-oxo-pyrazoline derivatives, but partly attenuate the herbicidal action on weeds.

It is known from US-A-4,834,908 that certain combinations of oil additives can increase the herbicidal action of compounds from the class of cyclohexanediones, benzothiadiazinone dioxides, diphenylether herbicides and aryloxyphenoxy herbicides.

Page 1, lines 17-27 of Appellants' original specification does disclose that (1) the safeners cloquintocet (or cloquintocet-mexyl) and mefenpyr (or mefenpyr-diethyl) are known, (2) 3-hydroxy-4-(4-methylphenyl)-5-oxo-pyrazoline derivatives are known (such as those disclosed in the teachings of Kruger and Böger discussed above), and (3) oil additives such as those disclosed in U.S. Patent No. 4,834,908 (i.e., the teaching of Hazen discussed above) are known.

From page 10, line 13 to page 11, line 26 of Appellants' original specification, Appellants' original specification discloses numerous known herbicides that represent herbicides recited as component b) in independent claim 1. The only other portion of pages 10-12 of Appellants' original specification that discusses "known components of the compound of formula I" is on page 12, lines 8-13, which discloses:

If not otherwise stated, the above-mentioned components of the compound of formula I are known from The Pesticide Manual, Eleventh Edition, 1997, BCPC. The components of the compound of formula I may, if desired, also be present in the form of esters or salts, as named e.g. in The Pesticide Manual, Eleventh Edition, 1997, BCPC. Butafenacil is known from US-A-5,183,492. Pethoamid has the CAS registration number 106700-29-2. Mesotrione is known from US-A-5,006,158.

This portion of Appellants' original specification also describes known herbicides that may be used in combination with herbicidal compounds of formula I, namely, known herbicides recited as component b) in independent claim 1. See, for example, butafenacil on page 10, line 31; pethoamid on page 11, line 4; and mesotrione on page 11, line 10.



**2. The Obviousness Rejection Based on Kruger In View of Dahmen, Böger, Hazen and Appellants' Own Specification**

Appellants respectfully submit that the proposed combination of the teaching of Kruger with the teachings of Dahmen, Böger, Hazen and pages 1 and 10-12 of Appellants' own specification, alone or in combination with the general state of the art, fails to make obvious Appellants' claimed invention as embodied in independent claim 1. As noted above, Appellants' claimed invention as embodied in independent claim 1 requires either herbicidal compound 1.007 or herbicidal compound 1.008 in combination with one or more herbicides recited as component b).

The art of record fails to disclose, teach or suggest any herbicidal composition comprising herbicidal compound 1.007 or herbicidal compound 1.008. Consequently, even if the proposed combination of the teaching of Kruger with the teachings of Dahmen, Böger, Hazen and pages 1 and 10-12 of Appellants' own specification is deemed proper, alone or in combination with the general state of the art, the proposed combination of the teaching of Kruger with the teachings of Dahmen, Böger, Hazen and pages 1 and 10-12 of Appellants' own specification fails to teach or suggest a herbicide composition comprising herbicidal compound 1.007 or herbicidal compound 1.008.

Regarding the alleged teaching of Appellants' herbicidal compound 1.007 or herbicidal compound 1.008 in the teaching of Kruger, Examiner Qazi states the following on page 15, lines 6-15 of the September 18, 2009 final Office Action:

WO 96/21652 teaches 4aryl and 4 heteroaryl 5 oxypyrazoline derivatives of formula (I) in which R<sub>1</sub>, R<sub>2</sub> R<sub>3</sub> and G as defined in claim 1 to compositions comprising these compounds to their use as insecticides acaricides or herbicides especially in crops of useful plants, and to selective herbicidal compositions comprising compounds of formula (I) and/ as safeners herbicide antagonistically effective quantities of either a quinoline derivative of formula (X) Compounds of formula 1 as in claim has been generically taught by the reference. R<sub>2</sub> and R<sub>3</sub> can form a ring and G represents CO-A. See abstract of the invention. See the entire documents especially, especially lines 21 to 49 on page 31 abstract; 3<sup>rd</sup> para on page 23; 2<sup>nd</sup> para on page 28.

Appellants have thoroughly reviewed the entire of teaching of Kruger including the specific portions cited by Examiner Qazi. However, as discussed above, the teaching of

Kruger does not teach or suggest Appellants' herbicidal compound 1.007 or herbicidal compound 1.008. As noted above, the teaching of Kruger does not teach or suggest any compounds of formula (I) wherein A and B together form the bivalent radical  $\text{—CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{—}$ . Further, the teaching of Kruger does not teach or suggest any compounds of formula (I) wherein  $n = 1$ , X and Z are identical, and Y differs from X and Z, and especially, any compounds of formula (I) wherein  $n = 1$ , X and Z are ethyl groups, and Y is a methyl group.

While the teaching of Kruger discloses that "A and B together represent the bivalent radical of a saturated or unsaturated, optionally substituted, mono-, bi-, tri- or polycyclic system," the teaching of Kruger does not suggest in any way that A and B together form the bivalent radical  $\text{—CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{—}$ . Further, while the teaching of Kruger discloses that G may be  $\text{—CO—R}^1$  and  $\text{R}^1$  may be an alkyl group, the teaching of Kruger does not suggest that  $\text{R}^1$  comprises  $\text{—C(CH}_3)_3$ .

Appellants respectfully submit that the teaching of Kruger actually guides one skilled in the art away from combining A and B together to form the bivalent radical  $\text{—CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{—}$  in view of the disclosure, for example, in columns 13-14 of Kruger. Given the entire teaching of Kruger, including the disclosure in columns 13-14, it is difficult for Appellants to understand how one skilled in the art would even contemplate combining A and B together to form the bivalent radical  $\text{—CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{—}$ . Appellants respectfully submit that the only suggestion of combining A and B together to form the bivalent radical  $\text{—CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{—}$  in the teaching of Kruger has been gleaned from Appellants' own specification, not the art of record.

Regarding Examiner Qazi's reliance on Appellants' own specification to formulate the present rejection under 35 U.S.C. §103(a), Examiner Qazi states the following on page 16, lines 15-17 of the September 18, 2009 final Office Action:

Specification of the present invention discloses that all the compounds in the present invention are known. See lines 17 to 27 on page 1, and on pages 10-12.

As noted above, Appellants' original specification does not state that herbicidal compound 1.007 or herbicidal compound 1.008 were well known as herbicides prior to Appellants' claimed invention. However, even if herbicidal compound 1.007 or herbicidal

compound 1.008 were known as herbicides prior to Appellants' claimed invention, the art of record fails to teach or suggest the combination of (1) herbicidal compound 1.007 or herbicidal compound 1.008 with (2) at least one herbicide recited as component b) in Appellants' independent claim 1.

Appellants respectfully submit that there must be some motivation or reason for one skilled in the art, given the teaching of Kruger to (1) seek out the teachings of Dahmen, Böger and Hazen, and along with an understanding of the general state of the art, (2) choose herbicidal compound 1.007 or herbicidal compound 1.008 from thousands of possible herbicides, (3) choose one or more herbicides listed as component b) in Appellants' independent claim 1 from thousands of possible herbicides, and (4) subsequently formulate new herbicide compositions comprising herbicidal compound 1.007 or herbicidal compound 1.008 in combination with one or more herbicides listed as component b) in Appellants' independent claim 1. Appellants respectfully submit that the only motivation for formulating such herbicide compositions has been gleaned from Appellants' original specification, not the art.

Appellants note that in *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007) (hereinafter, "the *KSR* case") and cases after the *KSR* case, the Court requires some motivation or reason for one skilled in the art to (i) combine elements of the prior art or (ii) modify a known compound in the way that a new invention does in order to render the new invention obvious. See, for example, the Court decision in *Takeda Chem. Indus., Ltd. v. Alphapharm Pty., Ltd.*, No. 2006-1329 (Fed. Cir. 2007) (hereinafter, "the *Takeda* case"), wherein the Federal Circuit stated:

While the KSR Court rejected a rigid application of the teaching, suggestion, or motivation ("TSM") test in an obviousness inquiry, the Court acknowledged the importance of identifying "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" in an obviousness determination. KSR, 127 S. Ct. at 1731. Moreover, the Court indicated that there is "no necessary inconsistency between the idea underlying the TSM test and the Graham analysis." Id. As long as the test is not applied as a "rigid and mandatory" formula, that test can provide "helpful insight" to an obviousness inquiry. Id. Thus, in cases involving new chemical compounds, it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed compound.

Although the holding in the *Takeda* case involved motivation for modifying a known compound, Appellants respectfully submit that a similar analysis applies to the required motivation for selecting and combining possible components from thousands of possible herbicidal concentrate components. As discussed above and consistent with the holdings in the *KSR* case and the *Takeda* case, the art fails to provide any reason that would have lead one skilled in the art to (1) choose herbicidal compound 1.007 or herbicidal compound 1.008 from thousands of possible herbicides, (2) choose one or more herbicides listed as component b) in Appellants' independent claim 1 from thousands of possible herbicides, and (3) subsequently formulate new herbicide compositions comprising herbicidal compound 1.007 or herbicidal compound 1.008 in combination with one or more herbicides listed as component b) in Appellants' independent claim 1.

Examiner Qazi has not cited any reason or motivation for one skilled in the art to formulate new herbicide compositions as recited in Appellants' independent claim 1 other than that the prior art discloses possible herbicide compositions along with thousands of possible herbicidal components. As noted above, the holdings of the *KSR* case and the *Takeda* case require "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" in an obviousness determination.

For at least the reasons given above, Appellants respectfully submit that a *prima facie* case of obviousness has not been made with regard to the rejection of independent claim 1 in view of the proposed combination of the teaching of Kruger with the teachings of Dahmen, Böger, Hazen and Appellants' own specification. Since claims 2-17 depend from independent claim 1 and recite additional claim features, Appellants respectfully submit that a *prima facie* case of obviousness has not been made with regard to the rejection of claims 2-17 in view of the proposed combination of the teaching of Kruger with the teachings of Dahmen, Böger, Hazen and Appellants' own specification. Accordingly, reversal of this rejection is respectfully requested.

**CONCLUSION**

For at least the reasons given above, Appellants respectfully submit that (1) Appellants' claims 1-17 meet the enablement requirements of 35 U.S.C. §112, first paragraph, and (2) the art of record in combination with a general understanding of the art fails to make obvious the claimed invention as embodied in Appellants' claims 1-17. Accordingly, it is respectfully submitted that each of the above rejections should be reversed.

Please charge any additional fees or credit any overpayment to Withers & Keys, LLC, Deposit Account No. 503025.

Respectfully submitted,

/James D. Withers/

James D. Withers  
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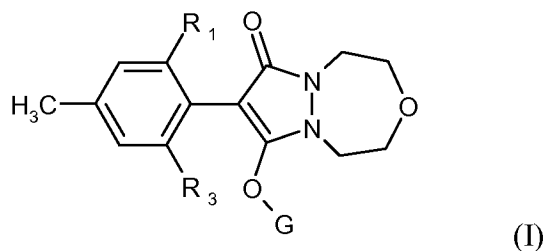
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Syngenta Docket No.: 31140  
W&K Docket No.: 10075.0048USWO

**CLAIMS APPENDIX**

1. A selective herbicidal composition comprising, as the active ingredient a mixture of

a) a herbicidally effective amount of a compound of formula I



or salts or diastereoisomers thereof, wherein:

$R_1$  and  $R_3$  are  $\text{CH}_2\text{CH}_3$

G is hydrogen or  $\text{C}(\text{O})\text{C}(\text{CH}_3)_3$ ; and

b) a herbicidally synergistic amount of at least one herbicide selected from clodinafop-p-propargyl, fenoxaprop-P-ethyl, tralkoxydim, triasulfuron, amidosulfuron, tribenuron, idosulfuron, thifensulfuron-methyl, metsulfuron, flupyrsulfuron, sulfosulfuron, mecoprop, fluroxypyr, MCPA, 2,4-D ester, 2,4-D amine, triallate, prosulfocarb, dicamba, diflufenican, picolinafen, pendimethalin, trifluralin, bromoxynil, ioxynil, flucarbazone, florasulam, propoxycarbazine, and metosulam.

2. Composition according to claim 1, which contains, to antagonise the herbicide, an antidotally effective amount of a safener selected from cloquintocet, an alkali salt of cloquintocet, an alkaline earth salt of cloquintocet, a sulfonium salt of cloquintocet, an ammonium salt of cloquintocet, cloquintocet-mexyl, mefenpyr, an alkali salt of mefenpyr, an

alkaline earth salt of mefenpyr, a sulfonium salt of mefenpyr, an ammonium salt of mefenpyr and mefenpyr-diethyl.

3. Composition according to claim 1, which contains an additive comprising an oil of vegetable or animal origin, a mineral oil, the alkylesters thereof or mixtures of these oils and oil derivatives.

4. A method of selectively controlling weeds and grasses in crops of cultivated plants, which comprises treating said cultivated plants, the seeds or seedlings or the crop area thereof, with a composition according to claim 1.

5. A method of selectively controlling weeds and grasses in crops of cultivated plants, which comprises treating said cultivated plants, the seeds or seedlings or the crop area thereof, with a composition according to claim 2.

6. A method of selectively controlling weeds and grasses in crops of cultivated plants, which comprises treating said cultivated plants, the seeds or seedlings or the crop area thereof, with a composition according to claim 3.

7. A method according to claim 4 wherein the cultivated plant is cereal or maize.

8. A composition according to claim 1 wherein the at least one herbicide in (b) is selected from clodinafop-p-propargyl and fenoxaprop-P-ethyl.
9. A composition according to claim 1 wherein the at least one herbicide in (b) is tralkoxydim.
10. A composition according to claim 1 wherein the at least one herbicide in (b) is selected from triasulfuron, amidosulfuron, tribenuron, idosulfuron, thifensulfuron-methyl, metsulfuron, flupyrsulfuron, and sulfosulfuron.
11. A composition according to claim 1 wherein the at least one herbicide in (b) is selected from mecoprop, fluroxypyr, MCPA, 2,4-D ester, and 2,4-D amine.
12. A composition according to claim 1 wherein the at least one herbicide in (b) is selected from triallate and prosulfocarb.
13. A composition according to claim 1 wherein the at least one herbicide in (b) is dicamba.
14. A composition according to claim 1 wherein the at least one herbicide in (b) is selected from diflufenican and picolinafen.



15. A composition according to claim 1 wherein the at least one herbicide in (b) is selected from bromoxynil and ioxynil.
16. A composition according to claim 1 wherein the at least one herbicide in (b) is selected from flucarbazone, florasulam, propoxycarbazone, and metosulam.
17. A composition according to claim 1, wherein the at least one herbicide in (b) is selected from pendimethalin and trifluralin.

**EVIDENCE APPENDIX**

March 17, 2005 Declarations of Dr. Jutta Glock

**RELATED PROCEEDINGS APPENDIX**

None